Alberta Patient Safety Survey 2004 - 2005

Part B:
Qualitative Analysis of Open-Ended Survey Questions

Prepared for the

Health Quality Council of Alberta

by

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Survey Highlights

Introduction

This report summarizes the results of an analysis of open-ended survey questions from the Alberta Patient Safety Survey 2004 (APSS). The APSS was a telephone survey of residents of Alberta (aged 18 years or older) conducted in the spring of 2004. A representative sample of 1,500 adult Albertans, stratified by age, gender and regional health authority, was surveyed.

The primary intent of the APSS was to talk to Albertans regarding preventable medical errors. Through a series of closed- and open-ended questions, the survey elicited:

1) Perceptions of the prevalence of preventable medical errors and opinions regarding possible causes and solutions; and,
2) Descriptions of experienced preventable medical errors.

This report summarizes the results of an analysis of the five open-ended survey questions:

1) What was the error?
2) What other serious health consequences resulted?
3) What do you think caused the error?
4) How could the error have been prevented?
5) Can you describe other solutions to prevent medical errors that result in serious patient harm?

Methods

A complete description of the survey methodology, including instrument development, sampling and data collection, may be found in the report: Alberta Patient Safety Survey 2004-2005 Part A Quantitative Analysis of Closed-Ended Survey Questions, prepared by Dr. Herbert Northcott and Jennifer Northcott (see HQCA website: www.hqca.ca). A description of the approach taken to analyze closed-ended questions may likewise be found in that report.

A separate analysis of open-ended questions was undertaken given the textual versus numerical nature of the open-ended data. Namely, a content analysis using a coding template was applied. Content analysis is an appropriate strategy given the structured nature of the questionnaire – meaning that interview participants responded to the same questions in the same order.

The coding template that was applied began with five category headings, corresponding to each open-ended interview question: error, result, cause, prevention (of experienced error) and suggestions (to prevent errors). To begin the analysis, a research assistant (Laura Vanderheyden) read the data, line by line, to further develop the coding template and begin conceptualizing subcategories within each main category. At all times, care was taken to label subcategories using the language of the interview participants to ensure their perspectives were accounted for in the analysis and interpretation the data.

After an initial coding template was developed, the template was presented to the entire research team for their opinions on the inclusiveness of the categories and subcategories. Minor revisions to the coding template were made based on this meeting and shortly after an inter-rater reliability exercise was undertaken. Two coders were involved in inter-rater reliability testing: the research assistant (Laura Vanderheyden) and another member of the research team (Charlene McBrien-Morrison). A random selection of data was chosen for this exercise that represented each of the five main categories of the coding template and included participant responses of varying length. Each coder applied the coding template individually and independently and the results of their analyses were later compared using a reporting function in N6, a qualitative software program that was used to manage the data, complete the coding and search for links between various components of the data. An overall reliability score of 0.81 (81% agreement) was obtained, which was deemed satisfactory. All coding discrepancies that arose during the exercise were noted and discussed between the two coders until consensus was reached. Changes to the coding template were made based on this exercise before the template was applied to the full dataset. Frequencies of occurrence of each code in the data were calculated and themes inherent in the data were identified.

Research Questions

Several questions were asked of the data, which centered on understanding how adults in Alberta conceptualize medical errors and related events. As data was collected from participants regarding any medical error that they or a family member had experienced while receiving health care service in Alberta, the primary intent of the analysis was to understand how the public conceptualizes medical errors, not to understand how medical errors may be experienced by different subgroups of the population.

The primary questions that guided this analysis included:

1. What types of events do the public classify as a medical error?
    a. Do such classifications vary by age, gender or health region?
    b. Are different types of events classified as errors depending on whether the error occurred within or outside of a hospital setting?
    c. Do such classifications depend on when the medical error occurred?
2. What is the range of results of medical errors, from a patient perspective?
3. What types of events do the public perceive to cause medical errors?
    a. Do such perceptions vary by age, gender or health region?
    b. Does whether the error occurred within or outside of a hospital setting affect such perceptions?
    c. Do such perceptions depend on when the medical error occurred?
4. What actions or strategies does the public believe could have prevented medical errors of which they are aware?
5. What actions or strategies does the public believe could be implemented to prevent medical errors in the future?

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Results

The results presented below are organized with respect to the research questions listed in the previous section. Following the results, a list of themes that emerged throughout the analysis is presented.

Question 1: Types of Medical Errors

Participant descriptions of the types of medical errors (n=539; some narratives identified more than one error) they or a family member had experienced were grouped into 12 categories with subcategories (see Table 1). As much as possible, labels given to the types of medical errors reflect the language of participants themselves.

To complement the classification of experienced medical errors presented in Table 1, following is a brief summary of the types of errors that were most commonly discussed by participants, in order of decreasing prevalence:

- Clinical performance (n=128; 23.7%): this category describes errors that were related to the performance of the regular duties of an individual health care professional and the error may be attributed to the performance of that one individual. Examples include: not following procedures; improperly reading test results; and (human) mistakes that occurred when properly following a procedure.
- Medication (n=123; 22.8%): this category describes errors related to either a practitioner giving or a patient receiving medication at any point during the care process. Examples include: writing or receiving the wrong prescription; receiving the wrong dose of a medication; and not receiving medication when it was needed.
- Diagnosis (n=121; 22.4%): this category describes errors that occurred around the time of initial patient diagnosis. Examples include: misdiagnoses; delayed diagnoses; and receiving inappropriate or unnecessary diagnostic tests.
- Communication (n=73; 13.5%): this category describes errors in communication between anyone involved in the health care process. Examples include: errors in communication between patients (and their families) and their health care practitioners; between health care practitioners at the same institution (*e.g.*, between a doctor and a nurse); and between health care practitioners at different institutions (*e.g.*, between a doctor and a pharmacist).

In the clinical performance category, 54 narratives (42.2%) were related to the belief that a practitioner did not properly follow a procedure, for example if a surgical incision was not properly cleaned. In the medication category, 53 narratives (43.1%) were related to receiving the wrong prescription. The diagnosis category was dominated by narratives related to misdiagnosis (n=72, 59.5%).

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Question 1a: Types of Medical Errors by Age Group

No clear pattern exists with respect to the types of medical errors discussed by participants of varying age groups; however, a few points are worth highlighting:

- The most frequently mentioned types of medical errors are consistent across all age groups, although the position of each type of error varies within each group. The four most frequently discussed types of errors are consistent with the four types of errors that were most frequently discussed overall.
- Diagnosis related errors were the most frequently discussed error type in the youngest age group and the frequency of discussion decreases by increasing age group (i.e. a negative trend by age may exist for this error type: 30%, 27%, 18%, 15%)[1].
- In the oldest age group, errors related to clinical performance were, by far, the most frequently discussed type of error. Thirty-six percent of the errors discussed by participants aged 65 years and older were related to clinical performance; the second most frequently discussed error type was medication related errors (16%).
- Approximately 25% of all errors discussed in the 18 – 64 year old age group were errors related to clinical performance.
- Approximately 13% of all errors discussed across all age groups were related to communication.

Question 1a: Types of Medical Errors by Gender

No clear pattern exists with respect to the types of medical errors discussed by male and female participants; however, a few points are worth highlighting:

- The four most frequently mentioned types of medical errors are consistent between males and females, although the position of each error type varies by gender. The four most frequently discussed types of errors are consistent with the four types of errors that were most frequently discussed overall.
- Errors related to diagnosis were the most frequently discussed error type by males (26%). The second most frequently discussed error type was errors related to clinical performance (25%).
- Errors related to clinical performance were the most frequently discussed error type by females (24%). The second most frequently discussed error type was medication related errors (22%).
- Approximately 25% of errors discussed by both males and females were related to clinical performance.
- Approximately 20% of errors discussed by both males and females were related to medication.

[1] All percentages are calculated as the number of participants in a given category who discussed a specific error type, divided by the number of participants in a given category.

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Question 1a: Types of Medical Errors by Health Region

No clear pattern exists with respect to how medical errors are perceived across health regions[2]; however, a few points are worth highlighting:

- The four most frequently mentioned types of medical errors are consistent across health regions, although the position of each error type varies by region. The four most frequently discussed error types are consistent with the four types of errors that were most frequently discussed overall.
- Errors related to clinical performance and diagnosis appear to be the most commonly perceived type of error in all regions (i.e. positions 1 and 2), followed by errors related to medication and communication (i.e. positions 3 and 4).

Question 1b: Types of Medical Errors by Location of Error (within or outside of a hospital)

Data was collected on 240 medical errors that occurred within a hospital setting and 95 errors that occurred outside of a hospital setting. Errors outside the hospital setting include errors that occurred at a public health clinic; a walk-in clinic; a family physician's office; a specialist's office; a pharmacy; or at another health practitioner's office, for example a chiropractic office.

- Outside the hospital setting, errors related to diagnosis were the most frequently discussed error type (36%), followed by errors related to medication (23%).
- Within the hospital setting, errors related to clinical performance were the most frequently discussed error type (31%), followed by errors related to diagnosis (17%).
- Approximately 14% of all errors that were discussed were communication errors, regardless of whether or not that error occurred within or outside of a hospital setting.
- Medication related errors that occurred outside a hospital setting (23%) were discussed more frequently than medication errors that occurred within the hospital setting (15%). Although less frequent within a hospital setting, medication related errors in the hospital are still a concern.

Question 1c: Types of Medical Errors by When the Medical Error Occurred

When a medical error occurred does not appear to affect the type of event that the public classifies as a medical error. Some interesting points are noted below.

- The four most frequently discussed error types are consistent regardless of when the error occurred, although the position of each error type by time grouping varied. The four most frequently discussed error types are consistent with the four types of errors that were most frequently discussed overall.

[2] Patterns were sought between: 1) Calgary Health Region; 2) Capital Health Region; and 3) all other health regions in Alberta (combined).

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- The most frequently discussed error type in the "more than 5 years ago category" was errors related to clinical performance (28%), followed by errors related to medication and diagnosis (20% each).
- The most frequently discussed error type in the "within the last year" category was errors related to diagnosis (24%), followed by medication errors (20%).
- A slight downward trend may exist with respect to errors related to clinical performance; 28% of errors that occurred over five years ago were related to clinical performance; 23% of errors that occurred within 2 -5 years ago; 23% of errors that occurred within 1-2 years ago; and 18% of errors that occurred within the past year.

Question 2: Results of Medical Errors

Through a series of closed-ended questions, participants were asked about serious health consequences that may have resulted from the experienced medical error, including: severe pain, significant loss of time at work, school, or other important life activities; temporary disability; long-term disability; death of a family member; and other serious health consequences. Narratives provided in response to questioning regarding other serious health consequences were analyzed qualitatively and grouped into categories: physical; psychological; treatment; financial; social; none; death; near death and reduced lifespan. Descriptions of the first five categories, which require further explanation, are provided below.

- Physical: describes any result of a medical error that impacted the physical self. The most commonly mentioned physical results include: pain; the acquisition of a disease or an infection; and the progression or advancing of a current disease or condition. Many other results were described, for example: bleeding; reduced mobility; loss of limb; stroke; heart attack; eye problems; scarring; brain damage; difficulty breathing; difficulty sleeping; nausea; nerve damage; deformity; fever; broken bone; hallucinations; loss of hair; and fertility issues.
- Psychological: describes any result of a medical error that impacted the psychological well being of a patient. Examples include: emotional trauma; mental anguish or suffering; depression; panic or anxiety; stress on the patient's family; moodiness and suicidal thoughts.
- Treatment: describes any result of a medical error related to receiving health care that would not have otherwise been required. Examples include: prolonged or subsequent treatment; further, prolonged or subsequent hospitalization; unnecessary treatment; and long-term care.
- Financial: describes any result of a medical error resulting in a financial outlay that would not have otherwise been necessary. Examples include: a patient or a patient's family member having to take time off work; unnecessary costs to the health care system; a patient having to pay for related and expensive procedures or testing; and a patient not being able to obtain reimbursement for related health care expenses.
- Social: a general category describing any result of a medical error that impacted on a patient's normal social interactions and behaviours. Examples include: being unable to meet family obligations; being unable to participate in otherwise normal activities; being unable to attend class; increased pressure on family members; having personal relationships affected; and having a driver's license revoked.

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Question 3: Perceived Causes of Medical Errors

Participants' beliefs regarding the cause of experienced medical errors (n=596; some narratives identified more than one cause) were grouped into eight categories with subcategories (see Table 2). As much as possible, labels given to the perceived causes of medical errors reflect the language used by the participants.

To complement Table 2, following is a brief summary of the most commonly discussed causes of medical errors, in order of decreasing prevalence:

- Clinical Performance (n=161; 27.0%): this category describes factors related to the performance of the regular duties of an individual health care professional that participants believed contributed to the occurrence of a medical error. Examples include: not properly following a procedure; not paying enough attention to the patient or procedure; being negligent or incompetent; and not examining a patient or situation thoroughly before making a diagnosis.

- Practitioner Attitude (n=136; 22.8%): this category describes characteristics of a practitioner's attitude that participants believed contributed to the occurrence of a medical error. Examples include: a lack of caring about the patient or a procedure; being rushed or too busy; and assuming what the problem was without listening to the patient or further examining the situation.

- Communication (n=91; 15.3%): this category describes factors related to the communication process that participants believed contributed to the occurrence of a medical error. Examples include: a lack of communication between professionals within the same institution (*e.g.*, a doctor and nurse); communication between professionals at different institutions (*e.g.*, a doctor and a specialist); between practitioners and patients (and their families); and not providing patients with the necessary information related to their health care concern.

- Practitioner Knowledge or Education (n=73; 12.2%): this category describes factors related to either the knowledge held by or the education received by health care practitioners that participants believed contributed to the occurrence of a medical error. Examples include: a practitioner's lack of knowledge regarding a patient's treatment or condition; an individual lack of experience; an individual lack of skill; and poor or insufficient training of practitioners.

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The clinical performance category included narratives describing perceived practitioner negligence or incompetence (n=36, 22.4%) and of perceptions that practitioners were not paying attention to their patients (n=33, 20.5%). One-quarter (n=35, 25.7%) of the narratives in the practitioner attitude category were regarding a perceived lack of caring by a practitioner towards their patient.[3]

Question 3a: Perceived Causes of Medical Errors by Age Group

No clear pattern exists with respect to perceived causes of medical errors discussed by participants of varying age groups. The top four most frequently discussed perceived causes of medical errors are consistent across all age groups, and the position of each type of cause (relative to other perceived causes) is relatively consistent across all age groups, in the following order: clinical performance; practitioner attitude; lack of communication; practitioner knowledge or education.

Question 3a: Perceived Causes of Medical Errors by Gender

No clear pattern exists with respect to perceived causes of medical errors discussed by male and female participants; however, a few points are worth highlighting:

- The top four most frequently discussed perceived causes of medical errors are consistent between males and females and are consistent with the top four perceived causes overall.
- Males most frequently discussed causes related to clinical performance (28%), followed by causes related to practitioner attitude (20%).
- Women most frequently discussed causes related to practitioner attitude (28%), followed by causes related to clinical performance (20%).
- Errors related to communication and practitioner knowledge or education were equally discussed by both male and female participants.

[3] Participants in the 2004 survey who neither themselves nor one of their family members had experienced a medical error were also asked a series of questions regarding potential causes of errors, in general. These questions had fixed responses relating to how important a situation or characteristic is as a cause of preventable medical errors. Participants were asked about: poor training of health professionals; overwork, stress or fatigue of health professionals; not enough nurses in hospitals; uncaring health professionals; poor supervision of health professionals; health professionals not working together as a team; doctors not having enough time with their patients; poor handwriting by health professionals; medical care being very complicated; and lack of computerized medical records. The most important causes as indicated by responses to these survey questions were: overwork, stress or fatigue of health professionals; doctors not having enough time with their patients and not enough nurses in the hospital (see Alberta Patient Safety Survey 2004-2005 Part A). Although each of these potential causes was raised by those participants who described their personal experiences with medical errors, the prevalence of which each potential cause was discussed differs between the open-ended and fixed survey responses.

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Question 3a: Perceived Causes of Medical Errors by Health Region

No clear differences exist regarding perceived causes of medical errors between health regions; however, a few points are worth highlighting:

- Clinical performance, practitioner attitude and communication are clearly the most frequently perceived causes across all health regions, in that order.
- Perceived causes related to the health care system and time were less frequently mentioned but still appear to be of importance.
    - Health care system (n=63; 10.6%) related causes describe factors controlled by the health care system that participants believe contributed to a medical error. Examples include: limited resources or health care cutbacks; health care professionals having too many patients; poor supervision of practitioners and students; and an inappropriate philosophy, such as health care being financially, not patient, driven.
    - Time (n=56; 9.4%) related causes describe factors related to: a delay in receiving a treatment, procedure, diagnosis or referral; a lack of time spent with a doctor or determining a diagnosis; or for doctor-patient follow up.

Question 3b: Perceived Causes of Medical Errors by Location of Error (within or outside of a hospital)

No clear pattern exists regarding perceived causes of medical errors in relation to where that error occurred (either within or outside of a hospital setting). The top four most frequently discussed perceived causes of medical errors are consistent regardless of whether the error occurred within or outside of a hospital setting. The top four types of causes discussed are consistent with the top four perceived causes overall, in the same order.

Question 3c: Perceived Causes of Medical Errors by When the Medical Error Occurred

When a medical error occurred does not appear to affect what the public perceives the causes of medical errors to be. Some interesting points are noted below:

- The top four most frequently discussed perceived causes of medical errors are consistent regardless of when the medical error occurred, but the position of each cause varies slightly with each time category. The top four types of causes discussed are consistent with the top four perceived causes overall.
- The most frequently discussed perceived cause in the "more than 5 years ago category" was causes related to clinical performance (35%), followed by causes related to practitioner attitude (23%). This was also the most frequently discussed cause, overall, for all time categories.

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Question 4: Beliefs Regarding how an Experienced Medical Error Could have been Prevented

Participants' beliefs regarding how experienced medical errors could have been prevented (n=920; some narratives identified more than one prevention strategy) were grouped into eight categories with subcategories (see Table 3).

To complement Table 3, following is a brief summary of the most commonly discussed prevention strategies, in order of decreasing prevalence:

- Clinical Performance (n=226; 24.6%): this category describes factors related to the performance of the regular duties of an individual health care professional, that if performed in a different manner, could have prevented a medical error from occurring. Examples include: if a procedure was correctly followed; if a different treatment was administered; if further diagnostic tests were completed; and if a patient had been monitored properly.
- Communication (n=221; 24.0%): this category describes factors related to the communication process, that if improved or performed differently, could have prevented a medical error from occurring. Examples include: if there were better communication between professionals; if a practitioner had read a patient's chart; if there were better communication between professionals and patients and their families; and if better, relevant or necessary information had been provided to a patient.
- Time (n=145; 15.8%): this category describes factors related to, typically, a lack of time or a delay in receiving health care services that if ameliorated could have prevented a medical error from occurring. Examples include: if more time had been spent with a patient; if more time was spent investigating a patient's concerns; if care was received in a timely manner; and if a patient had been referred to a specialist earlier.
- Practitioner Attitude (n=125; 13.6%): this category describes factors related to a practitioner's attitude or apparent attitude, that if improved could have prevented a medical error from occurring. Examples include: if a practitioner had paid more attention to a patient or a procedure; if a practitioner had taken his/her job more seriously; if a practitioner had increased concern for a patient; and if a practitioner had taken more care when performing a procedure.

Question 5: Suggestions to Prevent Medical Errors

All survey participants were asked to indicate how effective they thought each of a set of pre-defined possible solutions would be at preventing medical errors, through a series of closed-ended questions (see Alberta Patient Safety Survey 2004-2005 Part A). Following this series of questions, participants were asked if they could think of any other solution to prevent medical errors that result in serious harm to the patient. A wide variety of strategies were described[4]. The most frequently mentioned strategies are described on the following page in detail under their primary category headings. In addition to the strategies described below, participants also made

[4] Analysis of participant suggestions included both respondents who had and had not experienced a preventable medical error.

suggestions to improve: education and training of health care practitioners; attitudes of health care practitioners; clinical performance of health care practitioners; evaluation strategies of health care practitioners and institutions; the use of technology within the health care system; and reporting on and reacting to actual medical errors. Further, a small number of participants stated that no changes to the health care system would improve upon medical errors in the future.

- Resources: describes strategies related to resource levels and the use of resources in the health care system. The most commonly described resource-related strategy was increasing health care staff. Other strategies include: increasing resources (in general); having practitioners work fewer hours or shorter shifts; increasing practitioners' salaries; increasing the number of hospitals; accepting foreign trained doctors to work in Canada; and making resource allocations equitable across all health regions.

- Cooperation, Communication and Consultation: describes strategies related to any or all health care practitioners across the system working in a more cooperative and coordinated manner. Examples include: increased cooperation and communication between health care professionals (in general); increased cooperation and communication between doctors and nurses; including more than one health care practitioner in treatment decisions; improving coordination of care; and referring to other practitioners, when necessary.

- Health Care System: describes strategies related to policies or procedures that would need to be implemented at the level of the health care system. The most frequently described system-related strategy was addressing the fatigue and/or stress and/or heavy workload of practitioners. Other strategies include: mandating double checking and second opinions, where relevant; improving on health care delivery protocols (e.g., designing a protocol to count surgical equipment after surgery to ensure nothing is left in the patient); and increasing public responsibility for health.

- Communication: describes strategies related to communication between patients (and their families) and their health care professionals. The most frequently described communication strategy is simply increasing the amount of communication between practitioners and patients (and their families). Other strategies include: practitioners paying more attention to or listening to patients; practitioners providing more and better information to patients regarding their treatment; patients being more honest with health care professionals; and patients asking more questions.

- Time: describes strategies related to removing delays or addressing the lack of time patients have with their health care professionals. Specific examples include: practitioners are to spend more time with their patients; waiting times (emergency, surgery, specialist) are to be shorter; hospital stays are to be longer, when warranted; and practitioners are to take the time to read a patient's chart or history.

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Themes

A theme is a common thread that runs through the data that embodies an idea or makes an assertion about a topic. Five themes emerged during data analysis, as described below. In addition, it appears that medical errors and their related components (i.e. causes and prevention strategies) are very circular in nature. This circularity should be obvious in the above discussion, as the same primary categories are often described under each main heading. Although participants were asked specifically to describe a medical error, its cause and how it could have been prevented in separate and specific questions, responses relating to each of these components were found intermingled with responses to other components. When describing a medical error, many participants also described what they perceived to be the cause of that error or how that error may have been prevented. In many cases, the cause itself was seen as the error, or the participant could not distinguish between the two components. An explanatory example would be a communication related error: when a practitioner didn't listen or respond to a patient's concerns. The error itself is that the practitioner didn't listen, and the cause was often explained as the same incident. Further, participants stated that such errors could have been prevented if a practitioner had listened to a patient and his/her concerns.

The five themes that emerged from the data are described below.

- Communication: Some participants felt that they were not listened to or heard by their health care professionals. They felt that they did not have a voice and that their concerns, issues and opinions were not valued. They felt that they did not have a say in their health care or treatment decisions, but should have.

- Health Care System: Many participants, in varying contexts, alluded to the fact that the health care system is stressed and overloaded. This theme is evident in comments about health care professionals being over worked, working shifts that are too long, not having a long enough break between shifts, being stressed and busy and having too many patients, as well as there not being enough hospitals or hospital beds and in general, there not being enough money and resources in the system.

- Time: Time, and specifically a lack of time, was a common theme that emerged through discussion of various components of medical errors. Participants often described waiting too long for access to health care services and, in general, not having enough time to spend with their doctor. Identified consequences of this lack of time included: inadequate time for their doctor to get to know them, to listen to their concerns and understand their particular situation; doctors not having enough time to provide relevant and necessary information to patients (and their families); and doctors not having enough time to examine situations thoroughly and to consider the most appropriate treatment option for an individual patient.

- Practitioner Attitudes: The attitudes of individual practitioners were often seen as an immediate cause of an error and improving attitudes was seen as a strategy to improve the health care system and prevent future errors. While often discussed in relation to

communication, time and an overloaded system, many participants felt that their practitioner was arrogant, lazy, rushed, did not care about them or their concerns, was overconfident or did not have any people skills.

- Team-Oriented Care: Participants identified many different points in the health care process where communication, coordination and cooperation between all levels of health care professionals could be improved and could have prevented many experienced medical errors. For example: errors were perceived to have occurred as a result of poor communication; a lack of coordination and cooperation; inappropriate follow up; or because all necessary viewpoints, such as that of a pharmacist, a nutritionist and a general practitioner, were not considered. Participants expressed that a system that was better coordinated and that encouraged cooperation and communication at all levels of the system should result in fewer errors.

Acknowledgements

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Tables

Table 1: Reported Types of Medical Errors

Categories and Subcategories of Medical Error	Number of Reports	
	Categories	Subcategories
Clinical Performance	128 (23.7%)	
Did not follow protocol or complete procedure properly		54
Procedure did not go as intended (i.e. mistake)		39
Did not look into problem thoroughly enough		14
Made incorrect decision regarding care		10
Improperly read test results or patient chart		6
Not prepared for patient or procedure		5
Medication	123 (22.8%)	
Wrong prescription given/received		53
Incorrect dose		24
Adverse reaction		13
Not given when needed		16
Drug interaction		9
Medicated too long		3
Unnecessary		3
Ingredients not listed properly		1
Wrong route of administration		1
Diagnosis	121 (22.4%)	
Misdiagnosis		72
Delayed diagnosis		45
Inappropriate or unnecessary diagnostic tests		4
Communication	73 (13.5%)	
Did not listen to patient		18
Not enough or incorrect information given to patient		12
Mix up with patient charts or treatments		12
Different clinics, etc. did not communicate efficiently or effectively		11
Did not read patient chart		7
Did not report or record patient complications or related events in patient chart		7
Did not read or follow instructions left by other practitioner		3
Did not ask relevant questions before administering treatment		3

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Categories and Subcategories of Medical Error	Number of Reports Categories	Subcategories
Patient Management	34 (6.3%)	
Improper monitoring, supervision or follow up		16
Inappropriate care		15
Taken to wrong hospital/put in wrong ward		3
Time	21 (3.9%)	
Waited too long for treatment or testing		12
Waited too long for emergency physician		4
Did not take time to look into problem thoroughly enough		2
Delay in receiving test results		2
Not enough time in hospital		1
Surgery	13 (2.4%)	
Complications		6
Unnecessary		4
Inappropriate		2
Inadequate supplies		1
Therapy	10 (1.9%)	
Wrong		3
Not received		3
Delayed		3
Unnecessary		1
Practitioner Attitude or Disposition	8 (1.5%)	
Rude		7
Did not want to perform procedure (too risky)		1
No improvement in condition	4 (0.7%)	
Inefficiency with time or resources	2 (0.4%)	
Lack of procedures	2 (0.4%)	
Total*	539	

*Some respondents indicated more than one category of error for the experienced medical error.

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Table 2: Perceived Causes of Experienced Medical Errors

Categories and Subcategories of Perceived Cause	Number of Reports	
	Categories	Subcategories
Clinical Performance	161 (27.0%)	
Negligence/incompetent		36
Not enough attention to patient or inattentive		33
Outlined/standard procedure not followed		23
Human error or mistake made while following correct procedure		21
Not thorough examination before diagnosis		16
Poor or incorrect decision regarding care		15
Misunderstanding/Improper reading of test results or prescription		7
Improper preparation for a procedure		7
Did not consult necessary resources		2
Practitioner was not available when needed		1
Practitioner Attitude	136 (22.8%)	
Lack of caring/uncaring		35
Too busy/rushing		27
Assumption knows problem/overconfidence		21
Fatigue/overwork		18
Arrogance		16
Practitioner was too old		5
Lazy		3
Optimism		3
Discrimination		2
Personal concerns		2
No people skills		2
Practitioner was under the influence of alcohol		1
Concerned regarding risk factors		1
Communication	91 (15.3%)	
Same institution - between professionals		20
Different institutions - between professionals		15
Did not read patient chart		14
Did not listen to or talk to patient/family		14
Did not provide patient with appropriate information		8
Practitioner did not ask relevant questions		6
Did not record information properly		4
Did not refer when necessary		3
Poor handwriting		2
Did not have sufficient patient records		1
Pharmaceutical improperly labelled		1

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Categories and Subcategories of Perceived Cause	Number of Reports Categories	Subcategories
Patient did not ask relevant questions		1
Did not work with patient to find suitable treatment		1
Language barriers		1
Practitioner Knowledge or Education	73 (12.2%)	
Lack of knowledge on patient condition or treatment		31
Poor/insufficient training of practitioners		14
Individual lack of experience		12
Individual lack of skill		11
Two (or more) diseases share the same symptoms		3
Systemic lack of information on new drugs		2
Health Care System	63 (10.6%)	
Limited resources/cutbacks		25
Professionals have too many patients		18
Poor supervision of practitioners or students		7
Lack of procedures		5
Cost-focused versus patient-focused		5
Does not hold physicians accountable		2
Pressure to not prescribe antibiotics		1
Time	56 (9.4%)	
Not enough time with doctor		13
Delay in referral (e.g. specialist, surgery, testing)		13
Not enough time spent diagnosing a patient (incl. diagnostic tests)		12
Delay in receiving treatment/procedure/diagnosis		7
Not enough time spent on a procedure		7
Not enough time for proper monitoring or follow up		2
Doctors not taking time to discuss patient amongst each other		1
Not enough time for doctor-patient follow up		1
Treatment or Diagnostic Procedure	13 (2.2%)	
Difficult in nature		7
Equipment/supply error		4
Rare disease/condition		1
Two or more drugs share a similar name		1

Categories and Subcategories of Perceived Cause	Number of Reports	
	Categories	Subcategories
Patient Characteristics or Behaviour	3 (0.5%)	
Patient did not follow recommended treatment		1
High risk patient		1
Patient did not take enough responsibility		1
Total*	596	

*Some respondents indicated more than one cause for the experienced medical error

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Table 3: Perceived Prevention Strategies for Experienced Medical Errors

Categories and Subcategories of Prevention Strategies	Number of Reports	
	Categories	Subcategories
Clinical Performance	226 (24.6%)	
If had completed further diagnostic tests or looked into problem more thoroughly		97
If procedure was followed correctly		84
If administered a different treatment		30
If patient had been monitored properly		15
Communication	221 (24.0%)	
If had paid increased attention to/listened to patient/family		62
If better communication between professionals		58
If had referred when complications arose		37
If had read patient chart		27
If had provided relevant, necessary or better info to patient/family		19
If better communication between professionals and patients/families		18
Time	145 (15.8%)	
If spent more time doing tests/investigating concerns		38
If had spent more time with patient		34
If received care in timely manner		27
If spent more time on treatment/procedure		19
If had been diagnosed earlier		19
If didn't waste time		4
If referred to a specialist earlier		2
If practitioner had more time to interpret results		2
Practitioner Attitude	125 (13.6%)	
If cared more (or taken more care) for patient or procedure		54
If had paid more attention (to detail)		46
If wasn't fatigued		11
If had increased concern for patient		10
If had taken job more seriously		2
If had not discriminated		2
If had received second/triple opinion or had double/triple checked	75 (8.2%)	

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Categories and Subcategories of Prevention Strategies	Number of Reports	
	Categories	Subcategories
Health Care System	65 (7.1%)	
If a procedure existed for issue of concern		17
If there was more staff		15
If medical students were supervised better		11
If there were more resources		8
If practitioners had less patients		7
If new drugs were tested better		7
Technology	36 (3.9%)	
If computerized records/checklists		21
If had used more/better technology		9
If computerized database on interactions		6
Practitioner Knowledge or Education	27 (3.0%)	
If professionals were better educated		14
If professionals had more knowledge		13
Total*	920	

*Some respondents described more than one prevention strategy for the experienced medical error